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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/618,187

07/10/2003

Kirby Floyd

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EXAMINER

ARANCIBIA, MAUREEN GRAMAGLIA

ART UNIT

PAPER NUMBER

1763

MAIL DATE

DELIVERY MODE

10/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/618,187

Applicant(s)

FLOYD ET AL.

Examiner

Maureen G. Arancibia

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **90**. (Paragraph 23) Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 17, 18, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 17 recites the limitation "the plurality of adjustment locations *on* the leveling plate" in Lines 3-4. There is insufficient antecedent basis for this limitation in the claim. Claim 13, from which Claim 17 depends, recites "separate adjustment

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locations distributed over the leveling plate” in Lines 14-15. Thus, Claim 13 does not provide antecedent basis for a recitation of adjustment locations *on* the leveling plate. For the purposes of the following examination on the merits, Claim 17 has been interpreted as referring to a plurality of adjustment locations on the leveling plate, which are not necessarily the same as the “separate adjustment locations” recited in Claim 13 (nor the same as the “plurality of corresponding adjustment locations on the substrate support surface”).

Claim 18 is rejected due to its dependence on Claim 17.

The recitation in Claim 21 of “a corresponding adjustment location” is unclear, since it could refer to the “separate adjustment locations distributed over the leveling plate” or the “plurality of corresponding adjustment locations on the substrate support surface” recited in Claim 13. For the purposes of the following examination on the merits, the recitation of “a corresponding adjustment location” has been interpreted as referring to the “separate adjustment locations distributed over the leveling plate.” However, further clarification and/or correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 13-21 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,558,717 to Zhao et al.**

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Zhao et al. teaches an apparatus for adjusting a spacing between a gas distribution member and a substrate support (Figures 1, 3, and 8), the apparatus comprising: a processing chamber 133 including a gas distribution member 122; a substrate support 136 disposed in the processing chamber and located generally opposite from the gas distribution member (Figure 1), the substrate support having a substrate support surface 145 configured to support a substrate on which to form a layer (Column 6, Lines 57-64); a leveling plate 249 coupled to the substrate support; and three adjustment members (comprising screws 247) each coupled between the leveling plate 249 and a reference surface 134, the at least three adjustment members being disposed at separate adjustment locations on reference surface 134 distributed over (i.e. above) the leveling plate as broadly recited in the claim and independently adjustable to change positions of the leveling plate relative to the reference surface, thereby adjusting spacings between the substrate support surface and the gas distribution member at a plurality of corresponding adjustment locations on the substrate support surface to modify a tilt of the substrate support surface with respect to the gas distribution member. (Figures 1, 3, and 8; Column 17, Line 30 - Column 18, Line 6)

In regards to Claims 13-15, the adjustment members comprise threaded screws 247 (Figure 8; Column 17, Lines 66-67), which may themselves be considered to be measurement devices, since one need only count the number of exposed threads on each screw to obtain a measurement of the distance between the leveling plate and the reference surface at that measurement location. The leveling plate 249 includes

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apertures/slots at three "measurement locations" located on leveling plate 249 configured for insertion of the "measurement devices" (screws 247) to at least temporarily mount the "measurement devices" (screws 247) at each of the measurement locations, as broadly recited in the claim. Each of the adjustment members (screws 247) may be considered to be separated from the measurement locations (apertures/slots in the leveling plate 249) as broadly recited in Claim 13, both because the screws 247 will be separated from the walls of the apertures/slots by some small but finite distance, and because the screws 247 extend vertically away from the measurement locations, thus vertically separating most of the body of the screw 247 from the apertures/slots in the leveling plate 249. The screws may be considered to be temporarily mountable, in that they are removable by disassembly of the adjustment apparatus. (Figures 3 and 8)

Further in regards to Claims 14 and 21, the measurement locations (apertures/slots in leveling plate 249) may be considered to be located adjacent to the adjustment locations on reference surface 134 (i.e. where the screws 249 are coupled to reference surface 134), in that the measurement locations are near said adjustment locations. The measurement locations are separated from the adjustment locations on reference surface 134 by a distance, which is adjustable as discussed above by the action of the adjustment members (screws 247). Thus, the distance between the measurement locations and the adjustment locations on reference surface 134 would be capable of being set to be no more than 10% of a diameter of the substrate support, based on the adjustment of the distance between the leveling plate 249 and the

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reference surface 134 using the adjustment members (screws 247). It has been held that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Also, a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)

In regards to Claim 16, the adjustment members comprise adjustment screws 247 threadingly coupled to the leveling plate 249 and having ends bearing against the reference surface 134 of the processing chamber; and knurled lock nuts (Figure 8) threadingly coupled to the adjustment screws and bearing against a surface of the leveling plate. (Figures 3 and 8)

In regards to Claims 17 and 18, the leveling plate 249 is generally parallel to the substrate support surface 145, and the plurality of corresponding adjustment locations on the substrate support surface are generally aligned with a plurality of adjustment locations on the leveling plate where the adjustment members (screws 247) are coupled to the leveling plate, which are uniformly distributed around the substrate support surface with respect to a center of the substrate support surface (i.e. an adjustment of an adjustment member will cause a corresponding adjustment at a corresponding point on the substrate support surface), as broadly recited in the claims. (Figure 3)

In regards to Claim 19, the reference surface 134 is a bottom surface of the processing chamber 133. (Figure 1)

In regards to Claim 20, the gas distribution member 122 comprises a faceplate and the reference surface 134 is generally parallel to the faceplate. (Figure 1)

Response to Arguments

6. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendment to the claims.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571) 272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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